Coordination of Geotechnical Subconsultant Activities on Consultant-Designed Projects

Issue:

Concern that investigation / testing by Geotechnical Subconsultants working directly for the Prime Consultant may not be adequate.

Resolution:

Develop a policy and procedure to ensure that Geotechnical issues are discussed and resolved prior to award of the consultant contract.

Policy Statement: Geotechnical Coordination Meeting

- After selection of the Prime Consultant, and before Notice to Proceed:
  - ADOT project manager schedule a meeting, to be attended by:
    - The Prime Consultant
    - The Geotechnical firm that will do the work.
    - The ADOT Geotechnical Design Section project team member.

Policy Statement: Geotechnical Coordination Meeting

- The Geotechnical issues will be discussed and agreed to at this meeting.
- Any subsequent changes (due to access limitations, environmental restrictions, etc.) will be reviewed and approved by the ADOT Geotechnical Design Section team member prior to performing the changed work.

Policy Statement: Geotechnical Coordination Meeting

- The requirements of the ADOT Materials Preliminary Engineering & Design Manual is considered to be the minimal acceptable level of investigation and testing.

Example 1

- 900 Foot Long Retaining wall.
- Design requires founding on bedrock.
- Plans listed bedrock elevation based on Geotechnical investigation.
- Problem - bedrock was not encountered at the elevation shown.

Preliminary Engineering & Design Manual Requirement

- 5 or 6 borings at 150 ft spacing.
- Location - stagger borings at front and back of wall footing location.

Investigation Actually Performed

- 3 borings.
- Location - 75 to 100 feet away from the wall footing. (Remote location selected to avoid getting floodplain clearance.)

Result

- Redesign of the wall during construction.
- Changed condition and delay claims.

Example 2

- Large Cut, Excavation Required (several hundred thousand cubic yards)
- Highly plastic clay encountered during design
- Problem - Insufficient number of R-Value tests conducted.
- Results - The material with low R-values was not adequately represented in calculation of design / subgrade control values.
- (ie. – 50% of material encountered was clay, but clay was represented by only 10% of R-value tests).

Preliminary Engineering & Design Manual Requirement

- 10 – 12 R-values
- 8 borings / test pits (all to grade).

Investigation Actually Performed

- 3 R-values
- 5 borings / test pits, 2 did not go to grade

Result

- Pavement design section was redesigned during construction
- Much more subgrade overexcavation than expected was required